MEMORANDUM

To: Bulletin 160-2003 Staff and Advisory Committee

From: Angela Sherry and Spreck Rosekrans

Date: October 17, 2001

Subject: Response to materials presented at 10/3/01 Advisory Committee meeting

Thank you for the opportunity to give feedback on the substance and process for the next State Water Plan. We hope that these comments are clear and responsive to the questions asked of Advisory Committee members.

## Assumptions and Estimates

The categories included to date appear to be reasonably comprehensive. Our principle concern with the Bulletin has never been that the facts are incorrect but that they have been incomplete. We believe that economic data and unmet environmental uses are the most important items that need to be included. The current tables do not seem to include these items.

Environmental, urban and agricultural needs: We hope that the uses and needs among the three sectors can receive equal treatment. Past Bulletins have not addressed unmet environmental needs. as environmental use has been confined to mean the water that meets a legal obligation.[1] One consequence of this unequal treatment is that for dry years, past Bulletins have shown a decrease in environmental use but an increase in urban and agricultural use!

We support a Bulletin that shows not only where water is used for all three sectors but also where water is "scarce" and what the costs would be of reducing that scarcity. Our second "theme", as described below, suggests some sources for unmet environmental use data. We hope that these unmet environmental uses can be incorporated as part of the evaluation criteria as well as factors in a Study Plan.

Water Portfolio: We are generally supportive of the Water Portfolio concept. We note that each portfolio threatens to be lengthy. If each portfolio is 10 pages and there are 10

[1] Past Bulletins have used the term "shortage" for unmet urban and agricultural uses. We have indicated that the word "shortage" is simplistic, and that impacts should be dependent on the marginal cost of water. As Peter Baker of Stillwater Engineering likes to say, "Just because we don't all drive Ferraris does not mean that there is a money shortage." We support using the term the term "water scarcity", as suggested by Dick Howitt of UC Davis.

hydrologic regions and 10 Study Plans, there would be 1000 pages of Water Portfolios. It appears obvious that there will be summaries of the water portfolios that will garner all of the attention from those with limited attention spans. A critical issue is, therefore, how these summaries will appear and whether they represent a balanced view of each Study Plan. We will reserve much of our judgement on the water portfolio until we understand fully how this summary data will be presented in the bulletin.

**Distinguishing "Factors" and "Evaluation criteria"**

The Bulletin 160-03 staff, with input from the Public Advisory Committee, will be analyzing potential scenarios, known as "Study Plans" for the management of water in California. The inputs to these study plans are known as "factors" and the outputs will be assessed through the "evaluation criteria". It can be a bit confusing to distinguish the "factors" and "evaluation criteria" because many items apply to both. For example, one or more Study Plans may include an explicit change to either groundwater management policy or infrastructure. These Study Plans would contain changes to groundwater management as a factor. All study plans should include, however, the effects on groundwater use and levels as part of the evaluation criteria.

**Study Plan Evaluation Criteria**

A consistent application of "Study Plan Evaluation Criteria" should be applied to existing conditions (AKA "Where we are now") as well as to potential future conditions (AKA "Where we are going"), so that we can comprehensively compare various study plans.

The October 3 "Study Plan Evaluation Criteria" Feedback Form appears to be fairly comprehensive, though some of the elements might be rearranged a bit. Also, while we do believe that it is important to focus on the benefits of water use in the various sectors, we believe that the actual volume of water used in each sector should be reported as well. Of course, this brings up the issue of whether water use should be measured on an "applied", "net" or "depletion" basis. On this issue we are ambivalent and only suggest that the Bulletin should err on the side of making sure that enough relevant information is provided and that the staff, with the guidance of the Advisory Committee, should try to make the information as easily digestible as possible.

It does appear strange that there are not separate categories for urban and agricultural use. We generally feel that it is appropriate to have three separate categories for urban, agricultural and environmental use as part of the evaluation criteria. Each of these categories ought to include values for the amount of water available, uses for which supplies are insufficient, as well as the average and marginal costs of their supplies.

Some specific comments about the Criteria Categories:

- Catastrophic Vulnerability: This item needs considerable discussion in the "Where we are now" section, especially if we are to consider Study Plans that address these concerns. The effects of droughts, terrorism/vandalism or earthquakes should be considered. It is not clear to us whether floods or wildfires are relevant for significant consideration.

- Economics/Financial: National food production is obviously important, though water is only one of the necessary components of food production. We do not believe that this is an issue that the State Water Plan should pursue. If DWR and the Advisory Committee do pursue this issue, however, the State Water Plan should recommend what crops should be grown to maximize food production rather than allow the models to predict what crops should be grown to maximize economic productivity.

  Also, it is unclear how non-market values would be used in the economics/financial section. Water dedicated to the public trust should be included in this category. If there are other applications of non-market values, they should be listed explicitly. We also note that mitigation costs are missing from this section and should be included as part of the economics/financial criteria. Finally, third party impacts should be changed to third party effects, as there are often both impacts and benefits.

- Environmental: Under all subcategories, a list of unmet needs should be included. This list should be compiled by a broad group of public agencies and private organizations.

- Institutional: This category does not seem to be necessary.

- Water management accomplishments: This category does not seem relevant. Many of the sub-items could be (and are) in other categories.

**Where we are going**

Bulletin 160-2003 provides an opportunity to evaluate some important factors that have largely been ignored by past Bulletins. While California's population is increasing, it is already the case that there are unmet objectives in all three major use sectors. It is essential that the Bulletin cast a wider net than ever before and evaluate policy changes on how water is managed in addition to the customary process of evaluating the costs and benefits of new structures to move and store water. If this is not done, the Bulletin will ignore, once again, important factors that may provide cost-effective solutions.

In order to compare Study Plans, we do suggest that a default Study Plan be evaluated. This plan could be a "do nothing" plan, rather than a "most likely" plan, hopefully reducing potential controversy among Advisory Committee members and staff. For this reason, we do not specify ranges for all factors in a Study Plan. We are most interested in analyzing the effects of two groups of factors as described below. We believe that it will

be easiest to assess the effects of these factors if other factors are unchanged. For example, we would not want the benefits of a water marketing policy to be diminished or exaggerated by differences in hydrology or per capita income. We want the benefits of water marketing to be evaluated on its own merits, independent of hydrology, per capita income and other independent factors.

It is more difficult to design study plans than to select values of ranges for factors that are of concern and interest. Ideally, it would be possible to analyze the costs and benefits of any combination of factors, but the number of Study Plans required would be impossible to complete.

Environmental Defense supports two principle themes in the Study Plans. One theme would show the benefits that we expect would result from implementing progressive economic reforms in the management of developed water. The second theme would adopt aggressive environmental restoration measures.

Any Study Plan that reflects the implementation of progressive economic reforms should include the following factors:

- An aggressive transfer policy that treats most of the water that is developed for consumptive use as a commodity to be bought and sold to its most efficient use. There are a number of obvious and not-so-obvious exceptions. Among the obvious is that residential users should be guaranteed to have adequate supplies of treated water for indoor use in their homes. The 2003 Bulletin should evaluate a Study Plan in which most consumptive use, including agricultural and some urban supplies, is allocated to its highest economic use.

- A long-term marginal-cost base pricing policy that would require end-use customers to pay for the full cost, including environmental mitigation, of incremental supplies. In many parts of California, especially in urban areas, agencies are paying very high costs to supplement their limited supplies. Often these high incremental costs are simply blended into the agencies average volumetric cost that they charge their customers.[2] It would be generally appropriate to determine what customers are using these incremental supplies and charge them the incremental cost, not the blended cost.[3] We view this approach as being equivalent to requiring that the benefit/cost ratio for any potential project be greater than 1.0.

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[2] Many agencies use tiered pricing, which, if the tiers are set high enough, can approximate marginal cost pricing. As far as we are aware, only the Marin Municipal Water district sets its tiers at levels that are designed to approximate marginal costs. See http://www.marinwater.org/howratesdetermined.html.

[3] CALFED's EEWMA (October 1999) evaluated a number of alternatives. Some used marginal cost pricing at the retail level to evaluate the cost-effectiveness of options while others used average cost pricing. For example, one alternative used average cost pricing and adopted an option of building south-of-Delta off-aqueduct storage that would cost $762/AF in the San Joaquin Valley, even though the willingness is less than $200/AF (e.g. Table 34). The alternatives that used marginal cost pricing, including the "unconstrained scenario", did not include this option (e.g. Table 4).

- All water conservation and reclamation measures that are cost-effective. This obvious item should be generally included in all Study Plans, though in some cases impacts to the environment or third parties of conserving water exist and should be considered. Under a progressive transfer policy, additional water conservation measures are likely to be viable, as their cost-effectiveness will be evaluated on a regional basis, rather than on a local basis.

- A Statewide groundwater policy that defines ownership of groundwater supplies. In much of California there is little or no regulation of groundwater pumping. Pumping groundwater often adversely affects neighboring landowners or the public interest, or both. If ownership of these supplies is defined (and pumping monitored), thoughtful management decisions can be made. Under the current system, there is often no incentive to manage groundwater, but only an incentive to extract it quickly before it is all gone, with classic "tragedy of the commons" results.

- No subsidies for water development. This may be implied in the items above, but consumers should pay the full cost of any developing water, including any environmental mitigation costs.

The second theme that we propose for the Study Plans is one that includes aggressive environmental restoration. Staff should to work with CALFED wildlife agencies to develop an aggressive "wish list" of desired water supplies for environmental use. This list would include not only wetlands and a wide variety of streams in California, but Colorado River outflow in the Sea of Cortez as well. In the Central Valley and Bay-Delta Watershed, this list could include CALFED's ERP flows from the AFRP Working Paper flows. The removal of some dams, especially those that have little or no impact on water supply reliability and those being considered by CALFED, should be included as well.

In addition to analyzing progessive economic reforms and aggressive environmental restoration as their own separate study plans, we would also like to see these two themes analyzed together in a study plan.